BEFORE THE

STATE CORPORATION COMMISSION

OF VIRGINIA

Application of	)	
	)	
Verizon Virginia Inc.	)	**Case No. PUC-2007-______**
and	)	
Verizon South Inc.	)	
	)	
For a Determination that Retail Services Are	)	
Competitive and Deregulating and Detariffing	)	
of the Same	)	

NORTHERN NECK (NN)

EXHIBITS

PUBLIC VERSION

Northern Neck (NN) Exhibits

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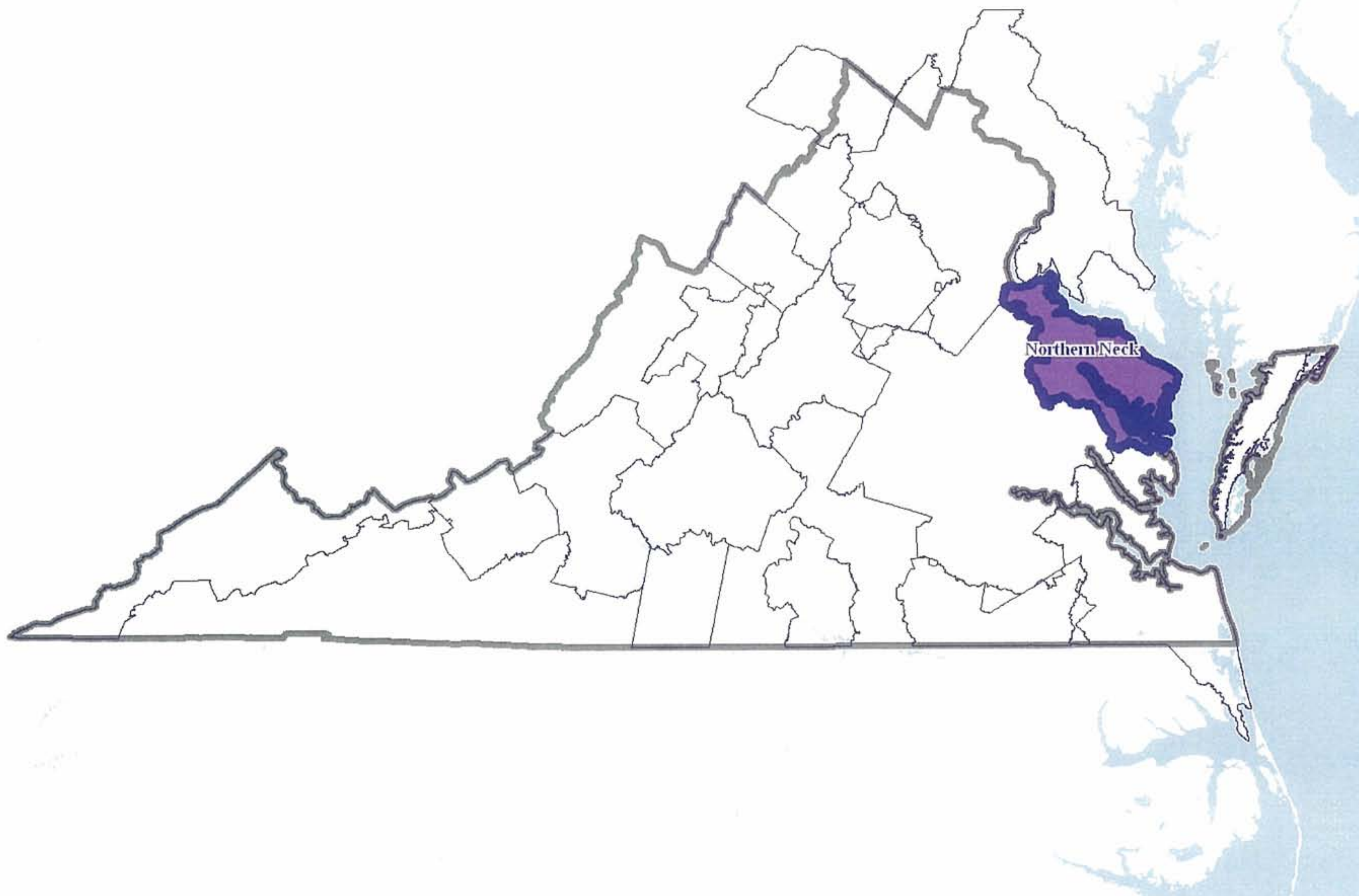
Northern Neck Region



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Northern Neck Region

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Northern Neck Region

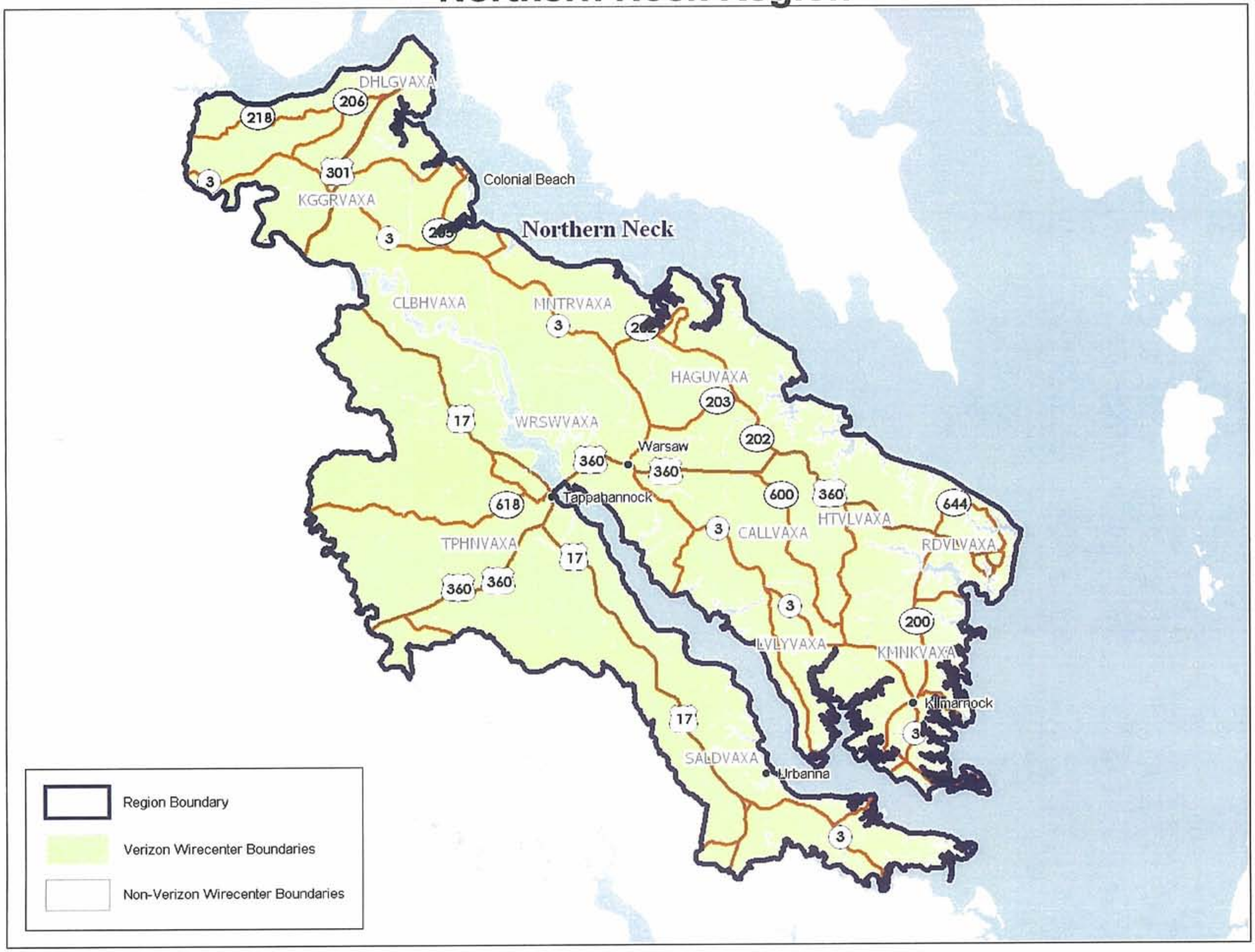

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Exhibit NN-2

COMPETITION AND POTENTIAL COMPETITION FOR RETAIL TELECOMMUNICATIONS SERVICES IN VERIZON'S NORTHERN NECK REGION SERVICE TERRITORY

Report of Jeffrey A. Eisenach, Ph.D.
January 17, 2007

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I. OVERVIEW

Verizon's service territory in the Northern Neck region consists of 1,521 square miles, with a population of 88,826 living in 38,660 households as of 2006; there are 4,605 business establishments.[1] The average population density is 58 residents per square mile, and the median household income is $46,325.[2] Verizon operates sixteen wire centers in the region.[3]

The Northern Neck region is located in the 540 and 804 area codes. It is bordered on the west by the Richmond MSA, on the north by the WAA MSA and on the east by the Chesapeake Bay. The region is bisected by the Rappahannock River, which divides Richmond and Lancaster counties to the northeast from Essex and Middlesex counties to the southwest. Also included in the area are Westmoreland, Northumberland and King George County, which is one of the fastest growing counties in the state.[4]

Population densities are relatively low in all sixteen wirecenters: The most densely populated, Irvington, has 181 persons per square mile, while the most sparsely populated, Tappahannock, has 36.[5]

Competition for telecommunications services is present and growing in the Northern Neck region. Virtually all households and businesses have access to BLETS and OLETS from traditional CLECs and from CMRS providers. Numerous CLECs serve customers in the region, with competitive carriers serving customers in **[BEGIN CONFIDENTIAL]** **[END CONFIDENTIAL]** One of the cable companies, Cox, is already providing cable telephony service, and Virginia Broadband ("VABB"), which serves 24 percent of households with wireless broadband service, also provides bundled VoIP service.

There are no barriers to entry. Indeed, all four of the five cable providers that do not yet offer cable telephony are positioned to do so quickly and without significant additional investment. VABB is preparing to expand the coverage of its fixed wireless network in the region.

The analysis below of the availability and usage of existing alternative services, and of the conditions associated with potential competition and new entry, demonstrates that a combination of existing and potential competition regulate the prices of Verizon's retail telephone services in the Northern Neck region.

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1. *See* Exhibit NN-4.
2. *See id.*
3. *See* Exhibit NN-3.
4. *See* Exhibit NN-1. King George County's population grew by 22.8 percent between 2000 and 2005, more than three times the statewide average of 6.9 percent. See US Census Bureau, Quick Facts, http://quickfacts.census.gov/qfd/states/51/51099.html (last visited Oct. 17, 2006).
5. *See* Exhibit NN-4.

II. AVAILABILITY OF ALTERNATIVE SERVICES

All 38,660 households in the Northern Neck region and all 4,605 businesses in the Northern Neck region have the option to obtain BLETs, OLETS and bundled services from alternative providers. Facilities-based competition is present, and numerous CLECs also provide services through resale and/or Wholesale Advantage agreements. Mobile telephone service is ubiquitous, and broadband service is widely available.

A. Traditional CLECs[6]

Traditional CLECs provide competition throughout the Northern Neck. All households and businesses in the Northern Neck region can receive service from traditional CLECs through resale and/or Wholesale Advantage services available from Verizon.[7] As of March 2006. **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]**

Altogether, a total of **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]**[10]

B. Cable Telephony

Six cable companies service the Northern Neck region: Charter, Comcast (which purchased the former Adelphia system), Cox, First Commonwealth Cablevision, Middlesex Cablevision and MetroCast Communications. Charter passes 4.5 percent of households; Comcast passes 18.6 percent; Cox passes 0.8 percent; First Commonwealth Cablevision passes 12.7 percent; Middlesex Cablevision passes 9.2 percent; and, Metrocast passes 19.2 percent.[11] Only Cox currently offers cable telephony.[12] As discussed further below, however, four of the other five carriers have infrastructures capable of providing cable telephony service, and the sixth, Comcast, has announced plans to deploy cable telephony throughout its service areas.

6. Here and in the remaining sections of this report, unless otherwise indicated, "traditional CLEC" refers to CLECs other than cable companies. "CLEC" refers to both traditional CLECs and cable companies.
7. *See* Exhibit NN-16.
8. *See* Exhibit NN-15.
9. *See* Exhibit NN-15.
10. *See* Exhibit NN-14.
11. *See* Exhibit VA-10 and Exhibit NN-7.
12. *See* Exhibit VA-10 and Exhibit NN-9. **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]**

C. Mobile Telephony

Of the 38,660 households in the Northern Neck region, virtually 100 percent (all but 44) have access to at least one CMRS provider, and 96 percent (all but 1,570) have access to two or more carriers.[13] In addition to Verizon Wireless, there are three CMRS providers offering retail telephone services in the Northern Neck region. They are Alltel, Cingular, and Sprint.[14]

There are 60 cellular towers in the Northern Neck region.[15] Of these, seven have been constructed since 2004.[16] There is at least one cellular tower located in the area served by fourteen of the sixteen Verizon wire centers.[17]

D. Broadband and VoIP

Increasingly, consumers are choosing to combine stand-alone broadband Internet access with VoIP services provided by "bring your own access" companies such as Vonage, thus creating their own bundles of broadband and retail telephony services. Both broadband and VoIP services are available in the Northern Neck region.

<u>Cable Modem and DSL Service</u>: Four cable providers, Cox, First Commonwealth Cablevision, Middlesex Cablevision and MetroCast offer cable modem service throughout their service territories in the region, and Comcast offers service to a small proportion of its territory.[18] Altogether, cable modem service is available to 42.0 percent of households.[19] In addition, Verizon makes DSL service without voice available to retail customers for $26.99 per month. DSL service is available to **[BEGIN CONFIDENTIAL]** **[END CONFIDENTIAL]** of households.[20]

<u>Fixed Wireless Service</u>: In addition to wireline cable modem and DSL service, approximately 51 percent of households have access to broadband service from wireless service providers, including Virginia Broadband.[21]

- <u>Virginia Broadband</u>: Virginia Broadband ("VABB") offers service throughout much of the Northern Neck Region, covering 24 percent of households from base stations located in and around Tappahannock and Warsaw.[22] VABB's broadband services range from 400 Kbps to 800 Kbps to 1.2 Mbps, with prices of $49.50, $69.50, and $89.50 respectively,[23] and it offers to quote prices for up to 15 Mbps.[24] VABB has

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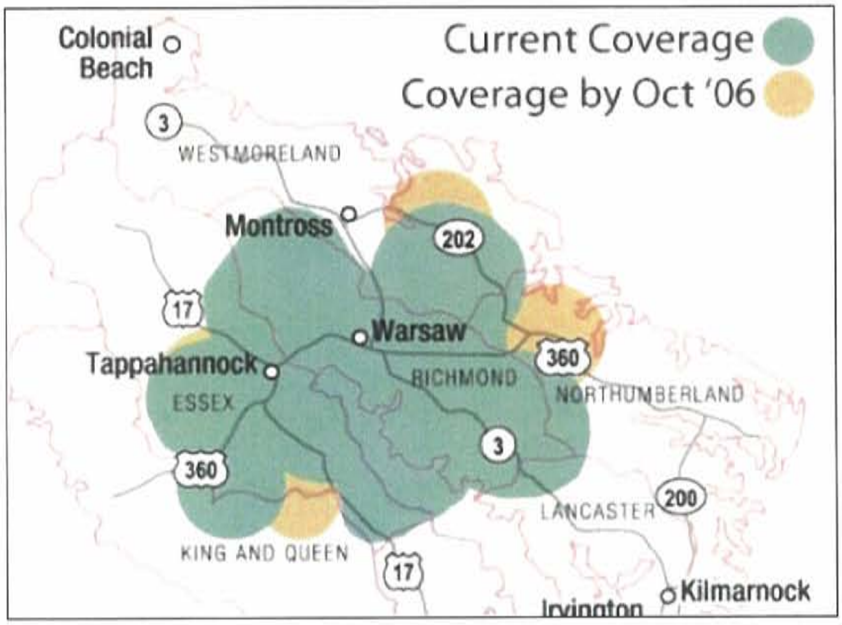
13. *See* Exhibit NN-12.
14. *See* Exhibit NN-11.
15. *See* Exhibit NN-10.
16. *See id.*
17. *Compare* Exhibit NN-3 and Exhibit NN-10.
18. *See* Exhibit VA-10 and Exhibit NN-8.
19. *See id.*
20. *See* Exhibit VA-4.
21. *See id.*
22. *See* Exhibit NN-13.
23. Virginia Broadband, VABB Service Levels, http://www.vabb.com/offline/services.htm (last visited Nov. 28, 2006).

also recently begun providing VoIP services to customers of its fixed wireless broadband services. VABB's VoIP services are available to residential customers for $32.95 per month and to businesses for prices beginning at $31.95 per seat for large businesses and $44.95 per month for small businesses. These prices include unlimited long distance service throughout the Continental United States and Canada, as well as a full package of enhanced features such as voice mail and three-way calling.[25] VABB's service territory is shown in Figure 1 below.[26]

Figure 1: VABB Service Territory in the Northern Neck Region



While both Cox and VABB offer bundles that include VoIP services, customers also have the option of purchasing alternatives to Verizon's BLETS, OLETS and Bundled Services from by-pass VoIP companies. VoIP providers that offer telephone numbers with 540 and 804 area codes, include Vonage, at&t, SunRocket, Net2Phone, and Packet8.[27]

E. Overall Availability of Alternative Platforms and Competitors

Looking overall at the availability of service from alternative platform providers (i.e., from mobile wireless, cable modem, DSL, facilities-based CLECs, and fixed wireless), 100 percent of all households in the Northern Neck region have service available from at least one alternative platform provider and 78 percent have service from two or more alternative platforms.[28]

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24. Virginia Broadband, What is Wireless Broadband, http://www.vabb.com/offline/wireless.htm (last visited Nov. 28, 2006).
25. *See id* at http://www.vabb.com/services_home.htm (last visited Nov. 28, 2006); *id.* at http://www.vabb.com/services_work.htm, last viewed October 17, 2006 (last visited Nov. 28, 2006).
26. *See id* at http://www.vabb.com/tawacov.htm (last visited Nov. 28, 2006).
27. *See* West Testimony at 81.
28. *See* Exhibit VA-4 and Exhibit NN-5.

Similarly, looking overall at the availability of service from all competitors – i.e., the same measure as above, but counting each competitor separately (e.g., counting each CMRS provider separately), competition is even more extensive: 100 percent of households have competitive alternatives from one or more competitors, and 98 percent have access to service from two or more Verizon competitors.[29]

III. USAGE OF ALTERNATIVE SERVICES

Verizon's internal data shows that at least **[BEGIN CONFIDENTIAL]** **[END CONFIDENTIAL]** of wireline telephone lines in the Northern Neck region were being served by competitors as of March 2006. However, these figures understate the true market share of competitors, since they fail to account for intermodal competition from wireless and broadband.

Survey data indicates that **[BEGIN CONFIDENTIAL]** **[END CONFIDENTIAL]** of households subscribe to broadband. Taking intermodal competition into account, the data presented below show that Verizon voice lines now account for only 43 percent of all wireline telephony, wireless telephony and broadband connections in the region.

Time series data presented at the end of this section also shows that Verizon's wireline market share is falling, both in proportion to the number of wirelines served and relative to the number of households in the region. Taken together, the data presented in detail below demonstrates that the competitive alternatives described in Section II represent viable alternatives for Verizon's BLETS, OLETS and Bundled Services in the Northern Neck region, since customers are actually switching to them in large numbers.

A. Traditional CLECs and Cable Telephony

As detailed in Exhibit NN-15, a total of **[BEGIN CONFIDENTIAL]** **[END CONFIDENTIAL]**[32]

These figures are consistent with the survey data presented by Mr. Newman, which shows that **[BEGIN CONFIDENTIAL]** **[END CONFIDENTIAL]** of residential

29. *See* Exhibit VA-5 and Exhibit NN-6.
30. This figure does not include approximately six percent of the population (who by definition were not reached through Verizon's telephone survey) who have cut the cord altogether. *See* West Testimony at p. 63, n. 84.
31. *See* Exhibit NN-15.
32. *See* Exhibit NN-19.

customers in the Northern Neck region are using providers other than Verizon.[33] In rural areas (including the Northern Neck region), the survey data show that 7.2 percent of POTS business customers and 10.1 percent of all business customers are using other providers.[34]

Exhibit NN-15 also demonstrates that wireline competition is present throughout the Northern Neck region. It shows that competitors are actually serving both business and residential customers in all but **[BEGIN CONFIDENTIAL]** **[END CONFIDENTIAL]** of the sixteen wire centers in the Northern Neck region, including the smallest and most rural wire centers.[35] These data demonstrate that alternatives to Verizon's BLETS, OLETS and Bundled Services from wireline competitors are widely available and in use by both residential and enterprise customers throughout the Northern Neck region.

B. Mobile Telephony

The survey data presented by Mr. Newman shows that **[BEGIN CONFIDENTIAL]** **[END CONFIDENTIAL]** of households in the Northern Neck MSA purchase telephone service from mobile telephone companies.[36] Moreover, **[BEGIN CONFIDENTIAL]** **[END CONFIDENTIAL]** report having at least one member of their household who considers their cell phone to be their primary phone.[37]

While Mr. Newman's testimony does not provide data on business usage of mobile telephones specifically for the Northern Neck region, it does indicate that the proportion of businesses in rural MSAs (including the Northern Neck region) which purchase mobile telephone service is 49.2 percent,[38] and that 12.7 percent of business respondents consider their mobile telephone to be their primary means of voice communication.[39]

These figures do not include mobile telephone customers who have dropped their wireline service altogether, as these customers were not eligible for the telephone survey. As Mr. West's testimony indicates, national estimates suggest that approximately six percent of residential customers have "cut the cord."[40]

Again, these figures demonstrate that the mobile wireless alternatives available to consumers in the Northern Neck region function as actual, viable alternatives to Verizon's BLETS, OLETS and bundled services.

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33. *See* Exhibit VA-21. The survey results regarding presented by Mr. Newman also includes a very small number of customers who listed mobile wireless or VoIP providers as their telephony provider.
34. *See* Exhibit VA-20.
35. *See* Exhibit NN-15. **[BEGIN CONFIDENTIAL** . **[END CONFIDENTIAL]**
36. *See* Exhibit VA-21.
37. *See id.*
38. *See* Exhibit VA-20.
39. *See id.*
40. *See* West Testimony at 64.

C. Broadband and VoIP

The survey data presented by Mr. Newman show that **[BEGIN CONFIDENTIAL]** [redacted] **END CONFIDENTIAL]** [41]

The survey data presented by Mr. Newman show that in rural areas in Virginia (including the Northern Neck region), 48.5 percent of businesses subscribe to high-speed broadband service.[42]

These overall usage rates for broadband demonstrate that the broadband plus VoIP "build your own bundle" option is available today to **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** households and nearly half of all businesses, which already subscribe to broadband.

D. Overall Penetration of Wireline and Intermodal Competition

While it is not possible to estimate precisely the number of lines Verizon has lost to wireline and intermodal competitors, it is clear that competition is having an impact on Verizon's market share, both in terms of wireline telephony and the overall markets for BLETS, OLETS and bundled services, and that wireline competitors are winning a growing proportion of customers. The data also indicate that intermodal competitors are winning a growing proportion of customers from wireline carriers of all types (i.e., including both Verizon and the traditional CLECs and cable telephony providers).

Both Verizon's line count and its wireline market share in the Northern Neck region are dropping. As indicated in Figure 2 below, between December 2003 and March 2006 (i.e., in 27 months), the ratio of Verizon lines to households fell from **[BEGIN CONFIDENTIAL** [redacted] **[END CONFIDENTIAL]** [44]

During this same 27-month period, the total number of wirelines served by wireline CLECs rose by **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** [45]

Figure 2 also demonstrates the significance of intermodal competition from wireless telephony and from broadband plus VoIP "build your own" bundles. It shows that the ratio of combined Verizon and CLEC residential lines to households fell from **[BEGIN**

41. *See* Exhibit VA-21.
42. *See* Exhibit VA-20.
43. *See* Exhibit NN-4 and Exhibit NN-19.
44. *See id.*
45. *See id.*

CONFIDENTIAL]

nt.[46] **END CONFIDENTIAL]** Assuming people have not stopped using voice telephony altogether, these data clearly indicate that wireless and broadband providers are competing effectively with both Verizon and other traditional wireline providers – a conclusion which is consistent with the high rates of wireless telephony usage and broadband adoption as discussed above.

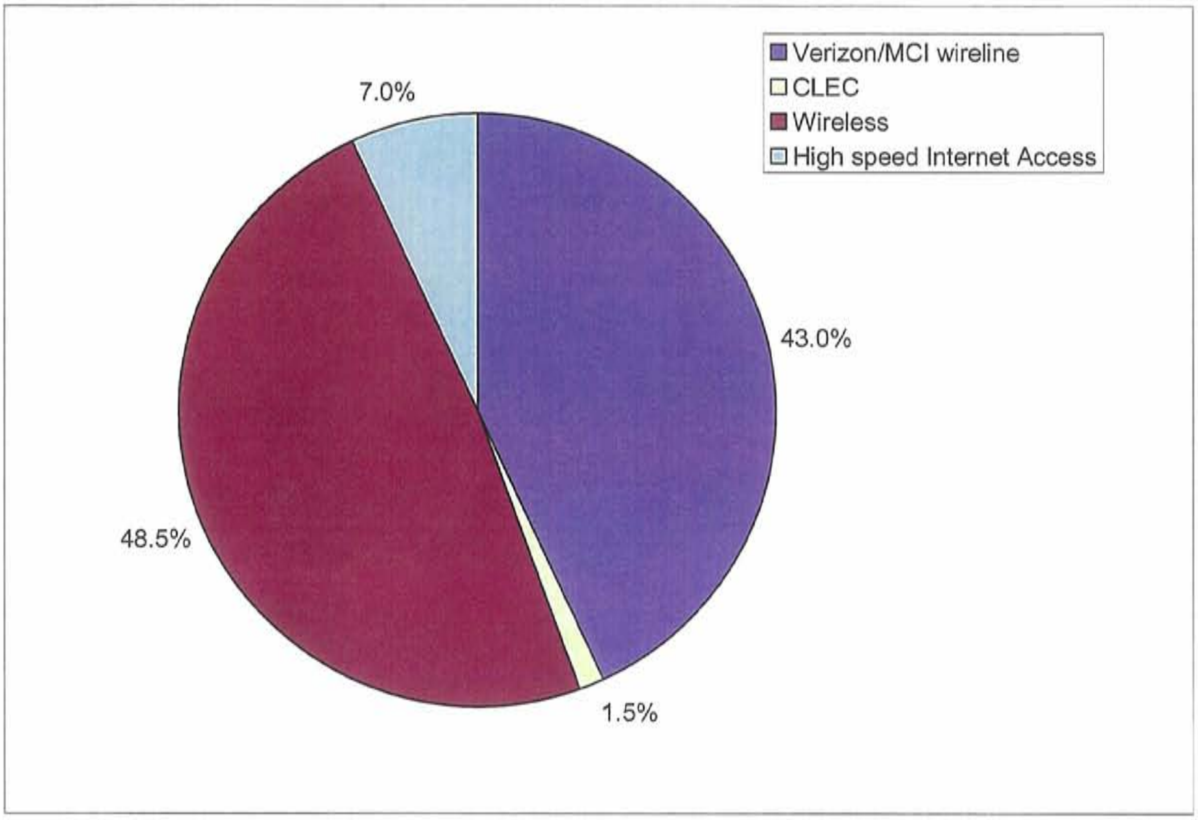
[BEGIN CONFIDENTIAL]

[END CONFIDENTIAL]

Another perspective on Verizon's loss of overall share is shown in Figure 3 below, which shows the percentage of total connections – including wireline telephony, wireless telephony and broadband connections – served by Verizon, based on the survey conducted by Mr. Newman. As the figure shows, Verizon voice lines now account for only 43.0 percent of all wireline telephony, wireless telephony and broadband connections.[47]

46. *See id.*
47. *See* Exhibit VA-22.

Figure 3: Verizon Share of Total Connections



IV. POTENTIAL COMPETITION AND ENTRY

While competition from CLECs using resale and/or Wholesale Advantage services, from CMRS providers, from one cable telephony provider and from by-pass VoIP providers, though present, is not as advanced in the Northern Neck region as in some areas, the potential for additional competition is clearly present.

First, three of the four cable companies not yet offering cable telephony have fully upgraded infrastructures and are in a position to deploy the service quickly and with minimal additional investment. The fourth, Comcast has stated its intention to rollout cable telephony over the former Adelphia's facilities suggesting that it is prepared to upgrade the infrastructure in the Northern Neck region to do so.[48] Once this rollout is complete, 19 percent of households in the Northern Neck region will have access to cable telephony.[49]

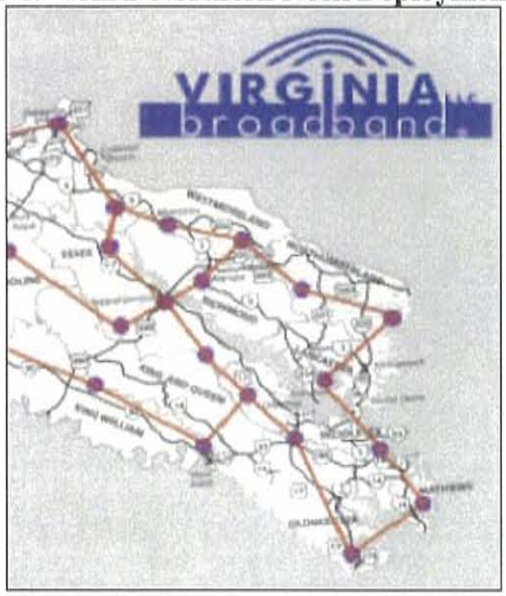
Second, VABB, which already serves a substantial portion of the region, has entered into a partnership with Rappahannock Electric Cooperative ("REC") to provide service throughout REC's service territory, which includes much of the Northern Neck region, "within the next

48. *See* West Testimony at 42. *See also* Comcast, FAQ, https://www.comcast.com/Customers/FAQ/FaqDetails.ashx?Id=3804 (last visited Dec. 3, 2006); *id* at https://www.comcast.com/Customers/FAQ/FaqDetails.ashx?Id=3807 (last visited Dec. 3, 2006).

49. *See* Exhibit VA-10.

three years."[50] As shown in Figure 4 below, VABB's announced deployment area includes multiple wireless POPs covering virtually the entire region.[51]

Figure 4: VABB Northern Neck Deployment Plan



CLECs are also well positioned to rapidly expand their services in the Northern Neck region. Non-facilities based companies, which provide services using resale and/or Wholesale Advantage services purchased from Verizon, are completely unconstrained in their ability to expand services. In the event of a price increase by Verizon, these companies could and would accommodate customers wishing to switch away from Verizon's services.

More broadly, barriers to entry in the Northern Neck region are relatively low. The region has access to competitive fiber, with Continental VisiNet operating a point of presence in Gloucester.[52] Moreover, in 2006, the Virginia legislature appropriated $1.4 million to fund development of additional high-capacity fiber in the area.[53] The widespread presence of cell towers throughout the region (there are towers in fourteen of the sixteen wire center areas, and seven new towers have been constructed since 2004) means that the mobile and fixed wireless entry is also inexpensive. Finally the areas served by all sixteen wire centers, representing 100 percent of the region's population, are rural, and thus potentially eligible for funding from the Rural Utilities Service (RUS).

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50. Press Release, Rappahannock Electric Cooperative, REC Partners with Virginia Broadband (May 18, 2006), *available at* http://www.myrec.coop/newsandpubs/pr/pressreleases.cfm?DocID=1773.
51. Virginia Broadband, Goal Coverage, http://www.vabb.com/goalcoveragearea.htm (last visited Nov. 28, 2006).
52. *See* Eisenach Testimony at III.B. and Exhibit VA-18; see also http://visi.net/about/vapop.html.
53. 2006 Acts of Assembly (Special Session I), c. 3 at item 104 (O)(1).

V. CONCLUSION

Both residential and business consumers have multiple alternatives to Verizon's retail telephone services in the Northern Neck region. Verizon is already losing customers to traditional CLECs and intermodal competitors, and this decline is taking place *at current prices*. The existing cable companies have either announced plans to deploy cable telephony services, or are in a position to do so without significant delay and with minimal additional investment. VABB offers wireless broadband, including bundled VoIP service, to a large part of the region, and has announced plans to cover the entire region. Active efforts are underway by numerous government entities to expand high-capacity fiber. If Verizon were to raise prices above competitive levels, it would both accelerate the rate at which it is losing customers to existing competitive services,[54] and increase the rate at which competitors and potential competitors deploy new services in the market. The availability of options already in the region, the announced intentions of actual competitors to expand their services, and the potential for additional competition are adequate to regulate the price of Verizon's retail telephone services in this region.

54. An analysis conducted by Dr. Taylor estimates that a decision by Verizon to raise prices by 5 percent in the Northern Neck region would reduce *net* revenues by **[BEGIN CONFIDENTIAL] [END CONFIDENTIAL]** annually. *See* Taylor Testimony, Table 14 at 94.

NN-3

Wire Centers by Rate Group, Exchange, City and County

REGION	LOC ST	WIRECENTER	LOCATION NAME	Rate Group	Exchange	CENTRAL OFFICE CITY	COUNTY
Northern Neck	VA-S	CALLVAXA	CALLAO	05	CALLAO	CALLAO	Northumberland
		CLBHVAXA	COLONIAL BEACH	09	COLONIAL BEACH	COLONIAL BEACH	Westmoreland
		DHLGVAXA	DAHLGREN	05	DAHLGREN	DAHLGREN	King George
		DTVLVAXA	DELTAVILLE	08	DELTAVILLE	DELTAVILLE	Middlesex
		FRNHVAXA	FARNHAM	07	FARNHAM	FARNHAM	Richmond
		HAGUVAXA	HAGUE	06	HAGUE	HAGUE	Westmoreland
		HTVLVAXA	HEATHSVILLE	06	HEATHSVILLE	HEATHSVILLE	Northumberland
		IVTNVAXA	IRVINGTON	05	IRVINGTON	IRVINGTON	Lancaster
		KGGRVAXA	KING GEORGE	09	KING GEORGE	KING GEORGE	King George
		KMNKVAXA	KILMARNOCK	06	KILMARNOCK	KILMARNOCK	Lancaster
		LVLYVAXA	LIVELY	07	LIVELY	LIVELY	Lancaster
		MNTRVAXA	MONTROSS	06	MONTROSS	MONTROSS	Westmoreland
		RDVLVAXA	REEDVILLE	05	REEDVILLE	REEDVILLE	Northumberland
		SALDVAXA	SALUDA	08	SALUDA	SALUDA	Middlesex
		TPHNVAXA	TAPPAHANNOCK	08	TAPPAHANNOCK	TAPPAHANNOCK	Essex
		WRSWVAXA	WARSAW	05	WARSAW	WARSAW	Richmond

Exhibit NN-3

NN-4

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EXHIBIT NN-4

NN-5

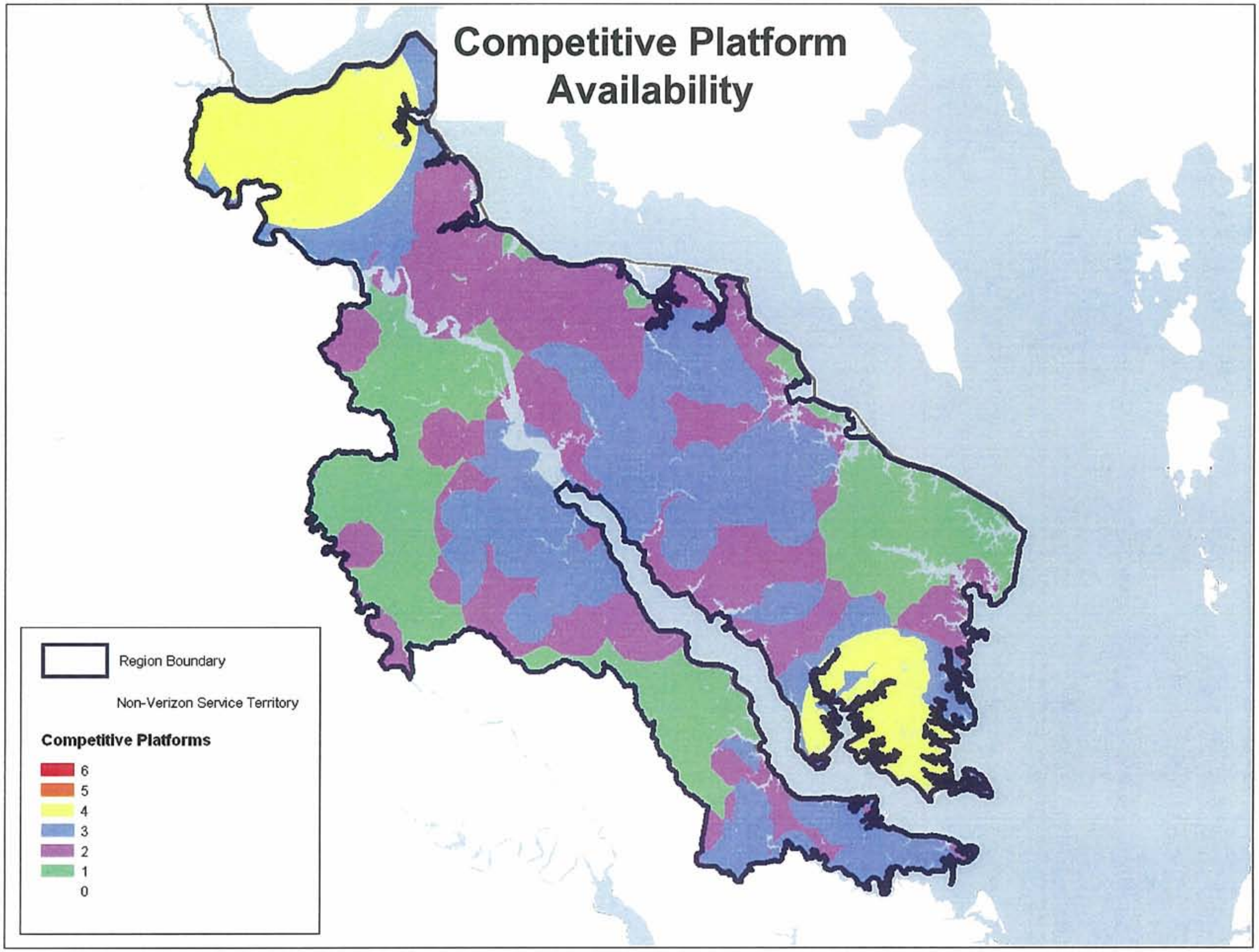

Competitive Platform
Availability
Region Boundary
Non-Verizon Service Territory
Competitive Platforms
6
5
4
3
2
1
0

Exhibit NN-5

NN-6

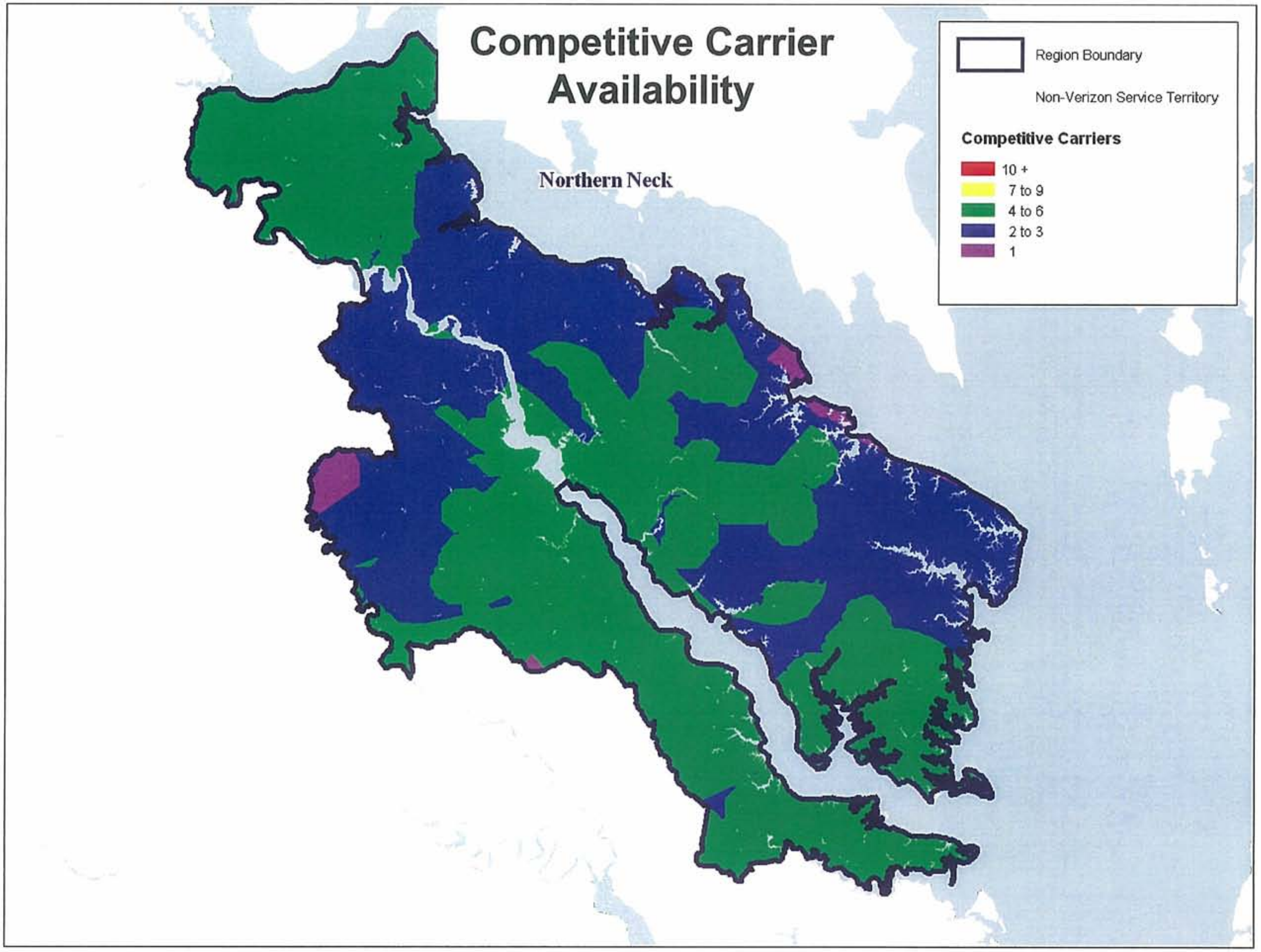

Competitive Carrier Availability
Northern Neck
Region Boundary
Non-Verizon Service Territory
Competitive Carriers
10 +
7 to 9
4 to 6
2 to 3
1

Exhibit NN-6

NN-7

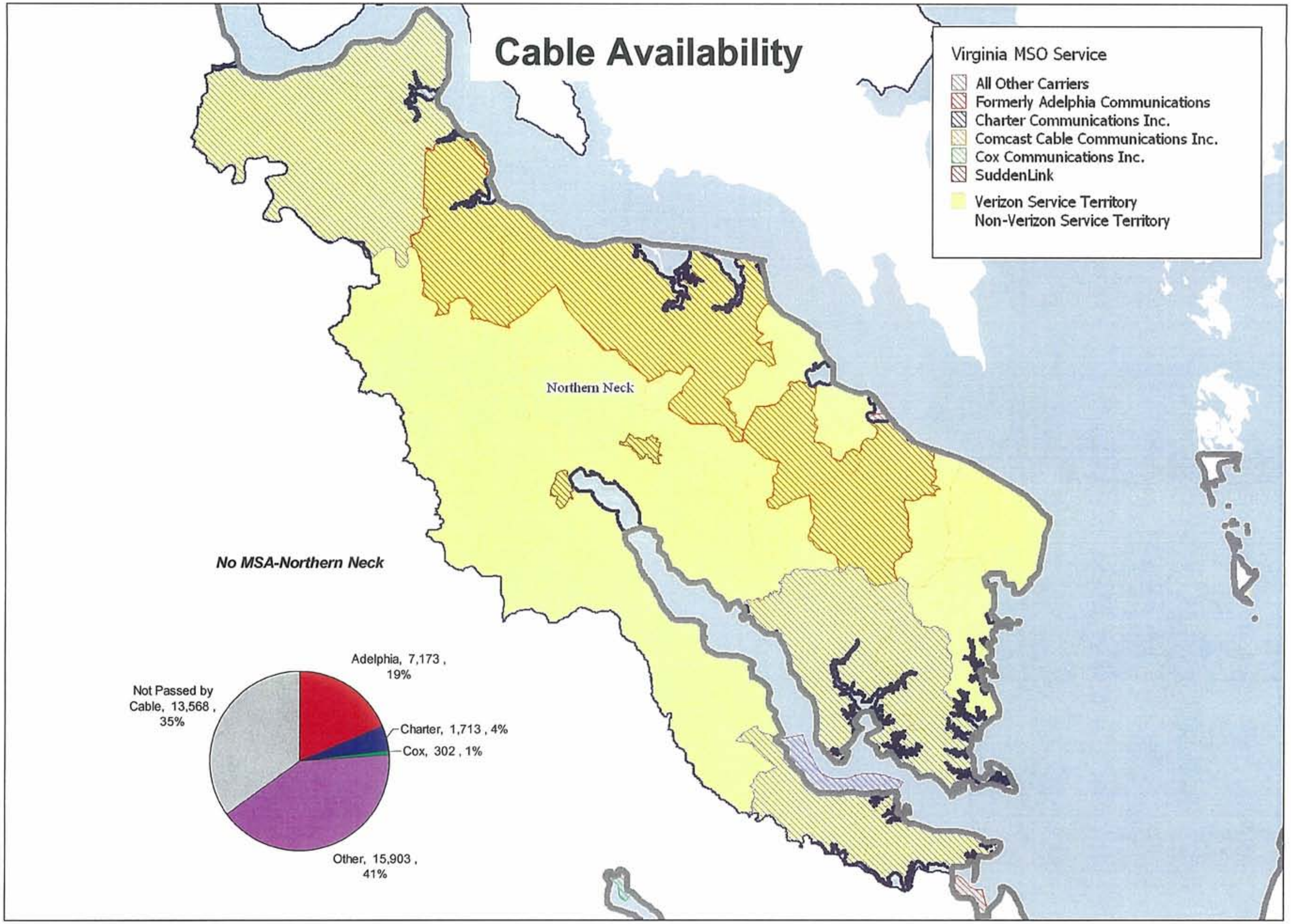


Exhibit NN-7

Note: HH numbers reflect only those households in Verizon's Service Territory

NN-8

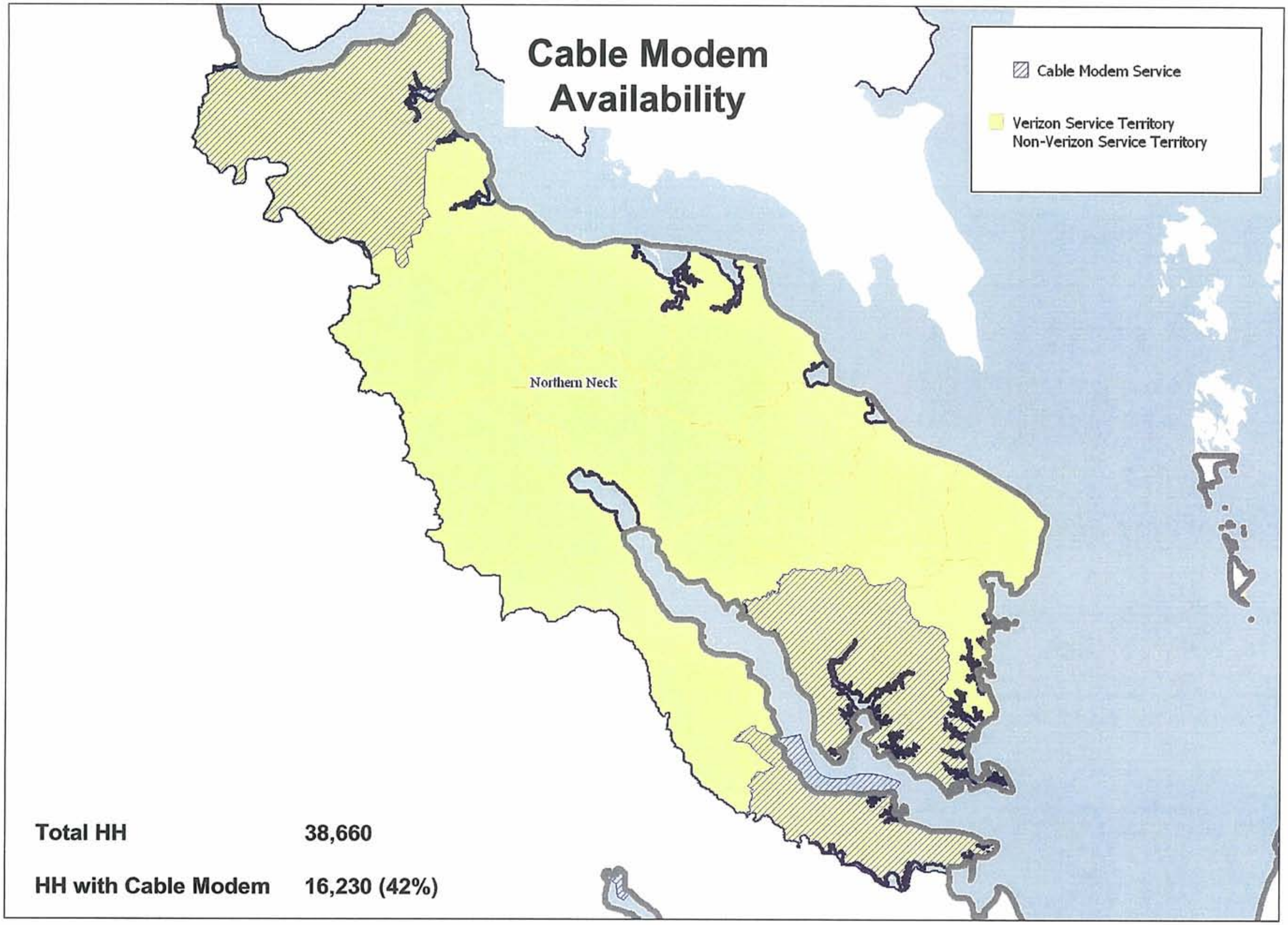
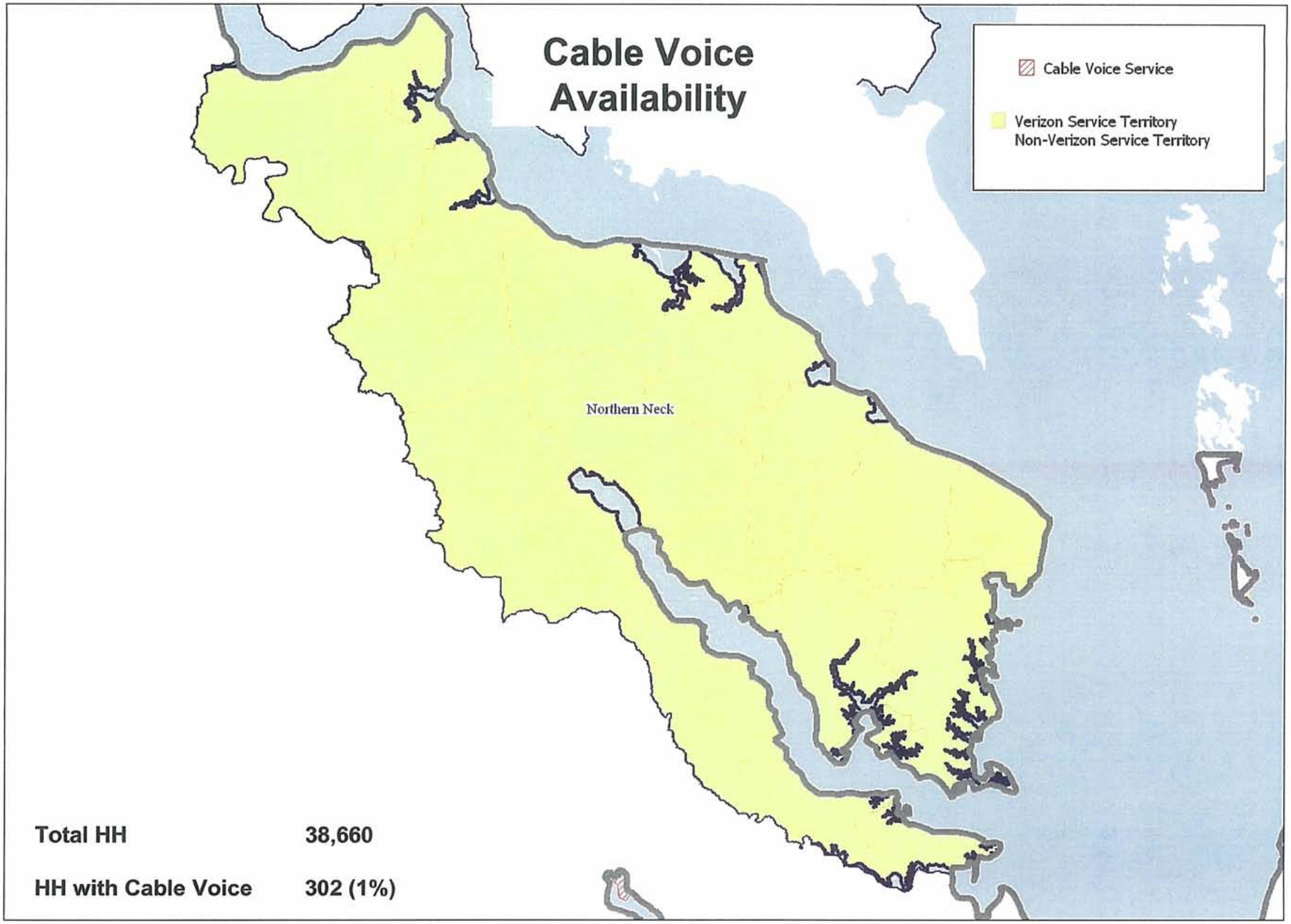


Exhibit NN-8

Note: HH numbers reflect only those households in Verizon's Service Territory

NN-9



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Note: HH numbers reflect only those households in Verizon's Service Territory

NN-10

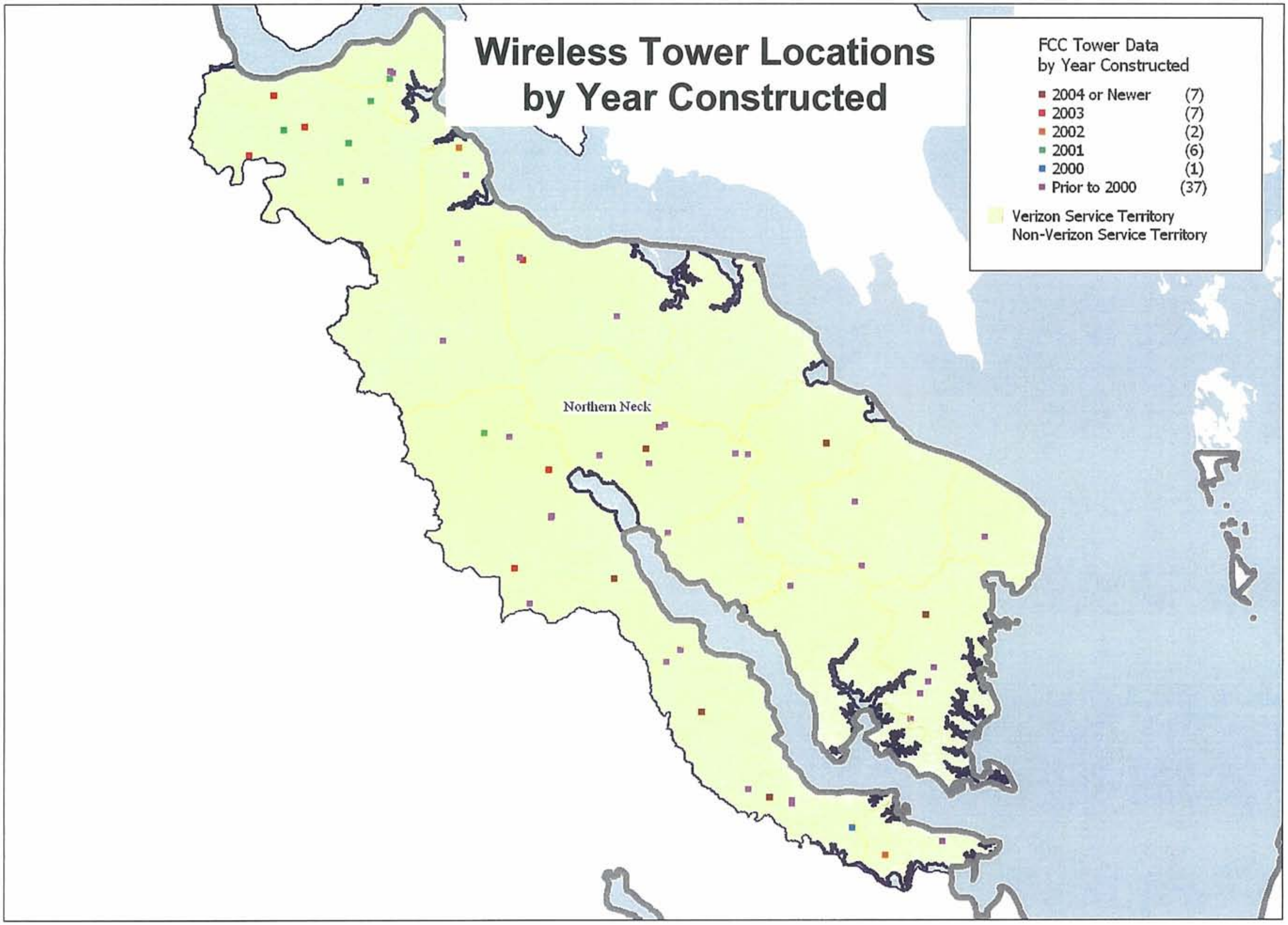
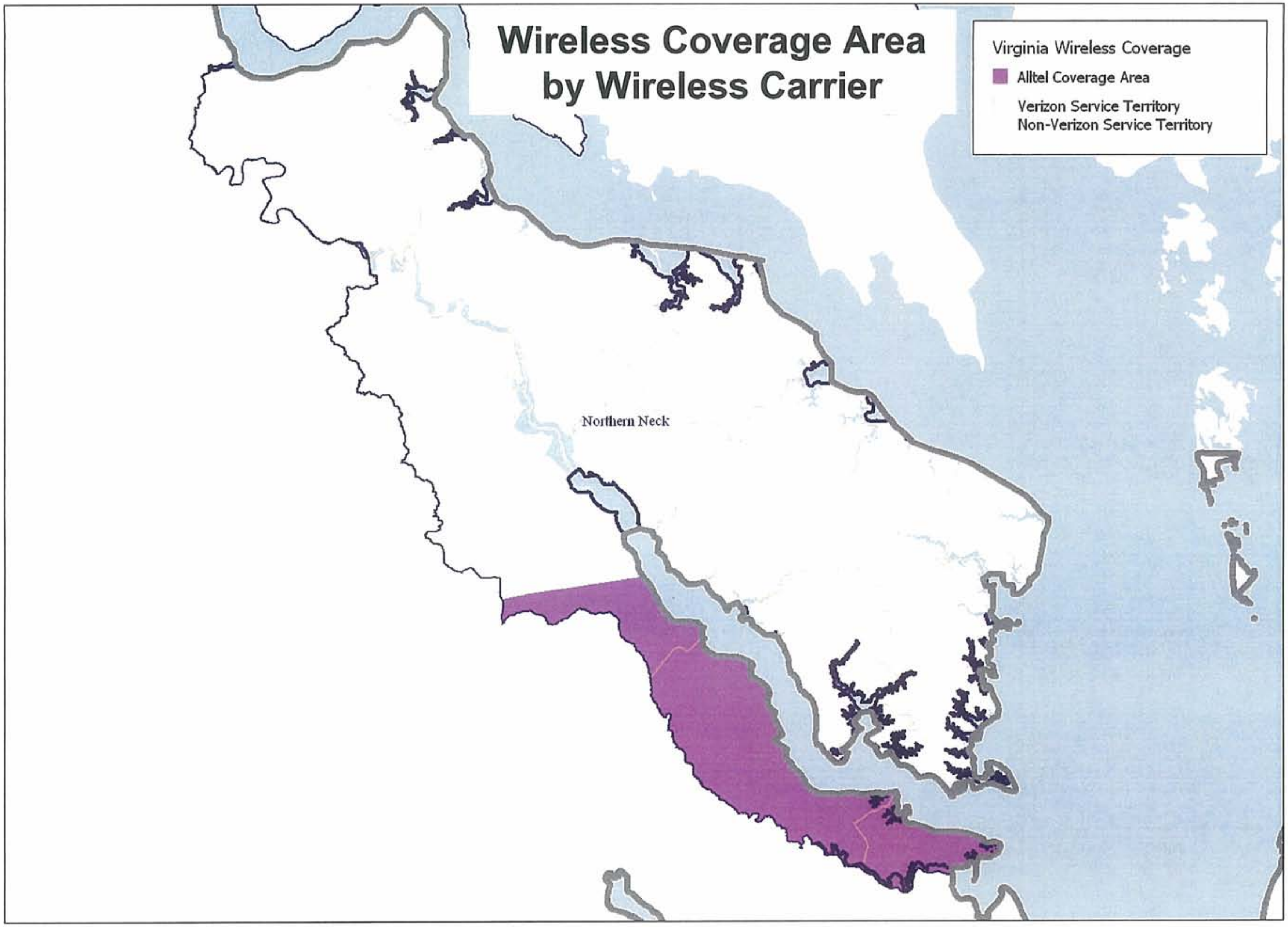


Exhibit NN-10

NN-11



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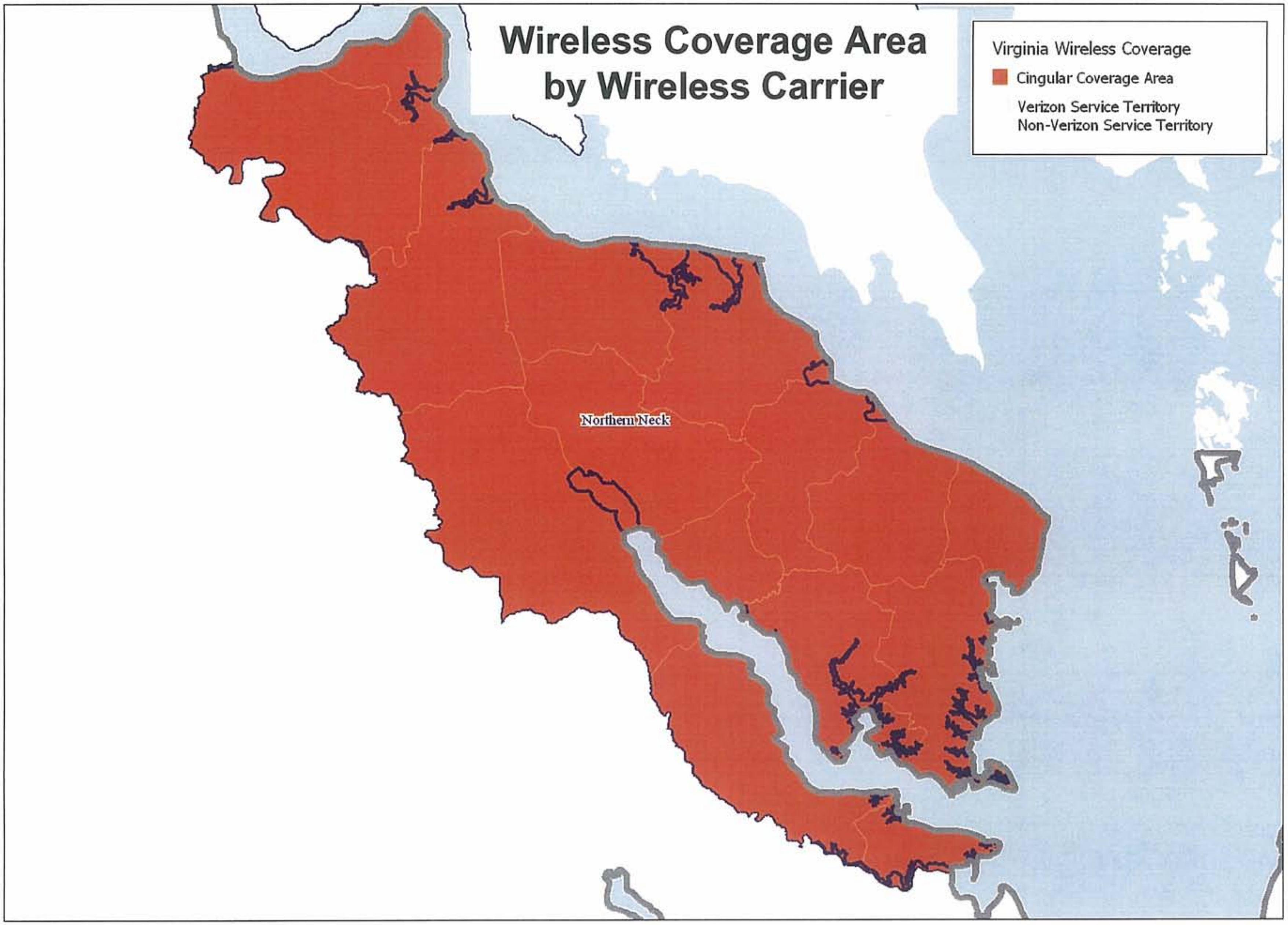
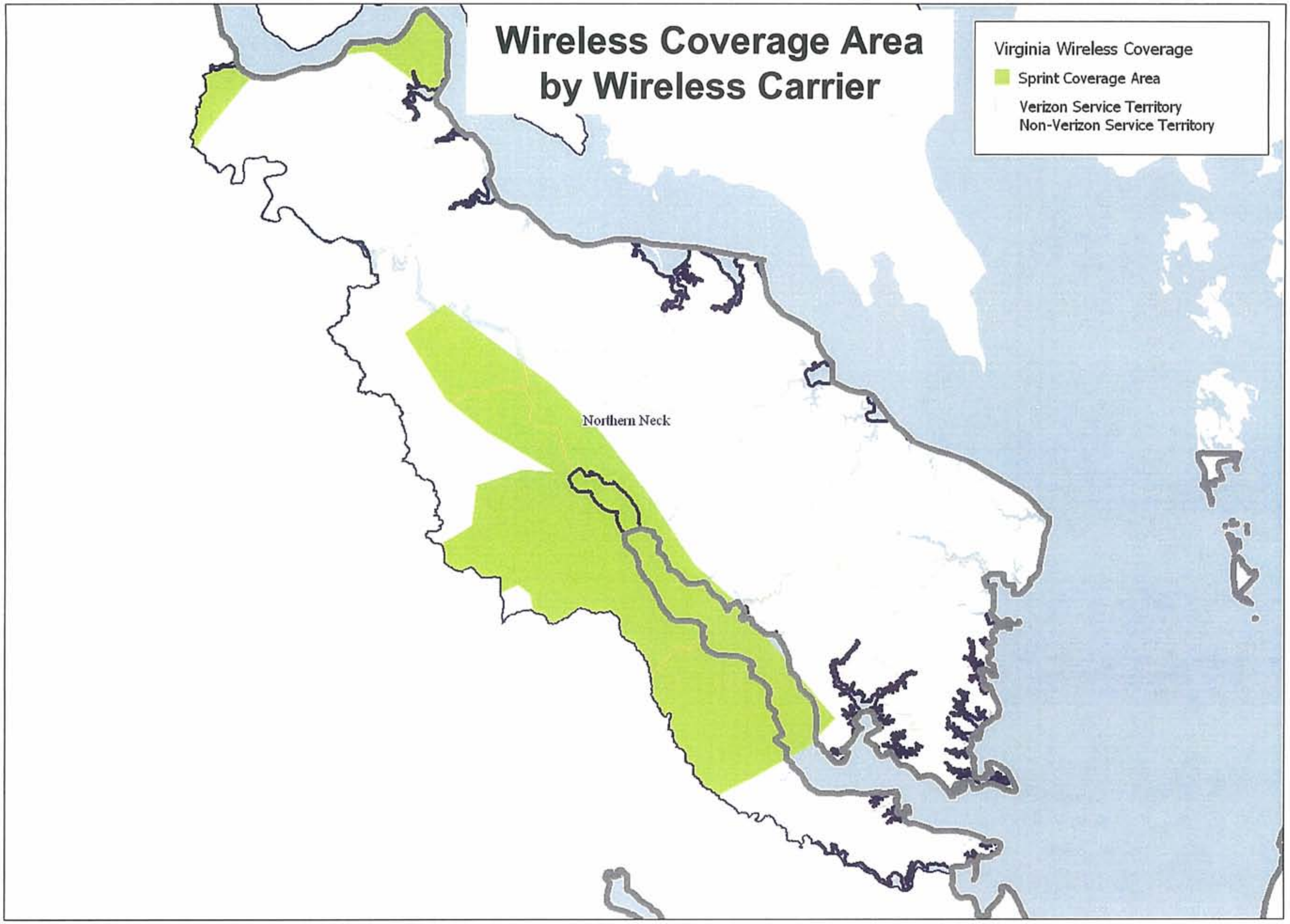


Exhibit NN-11, page 2 of 4



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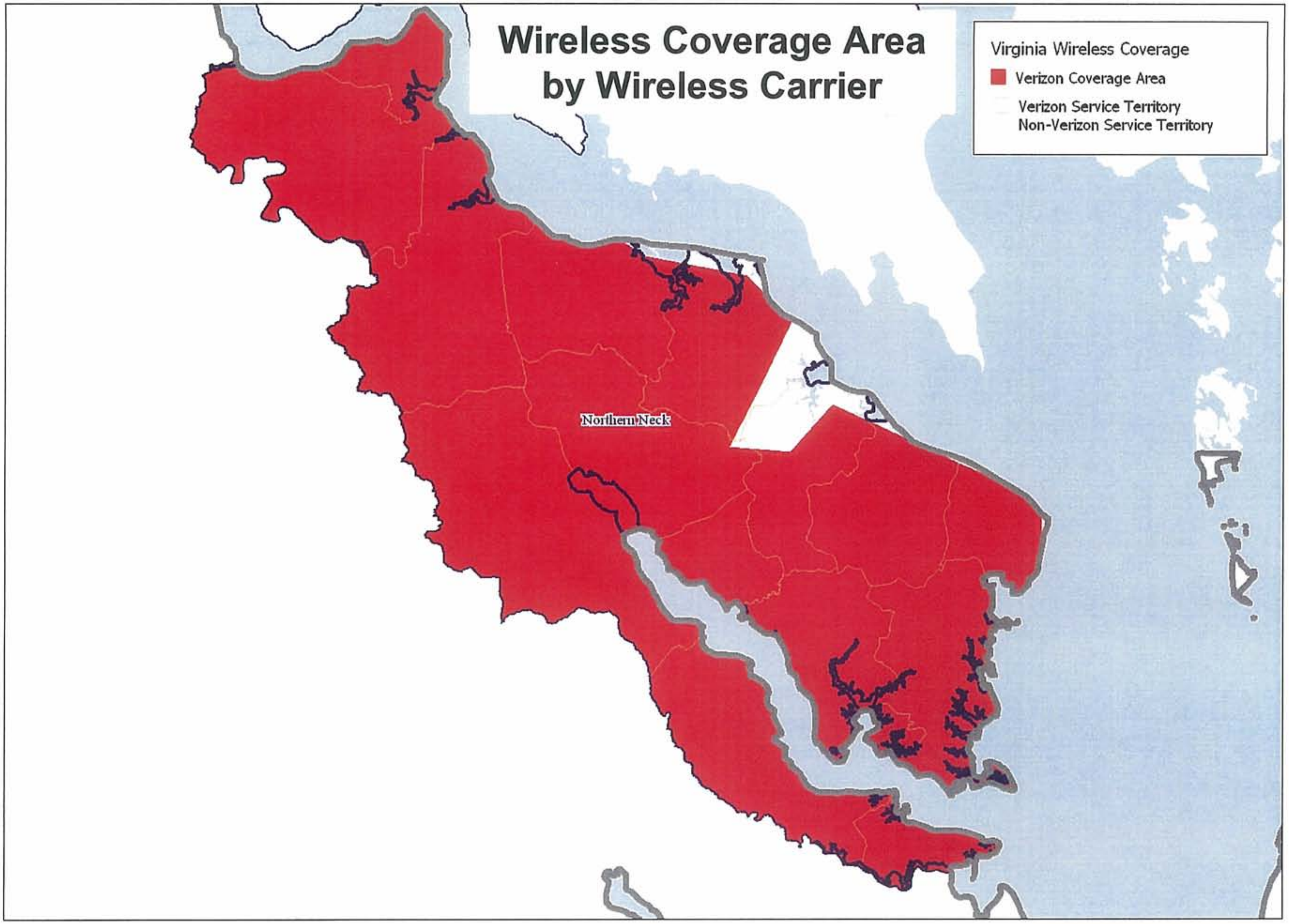

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NN-12

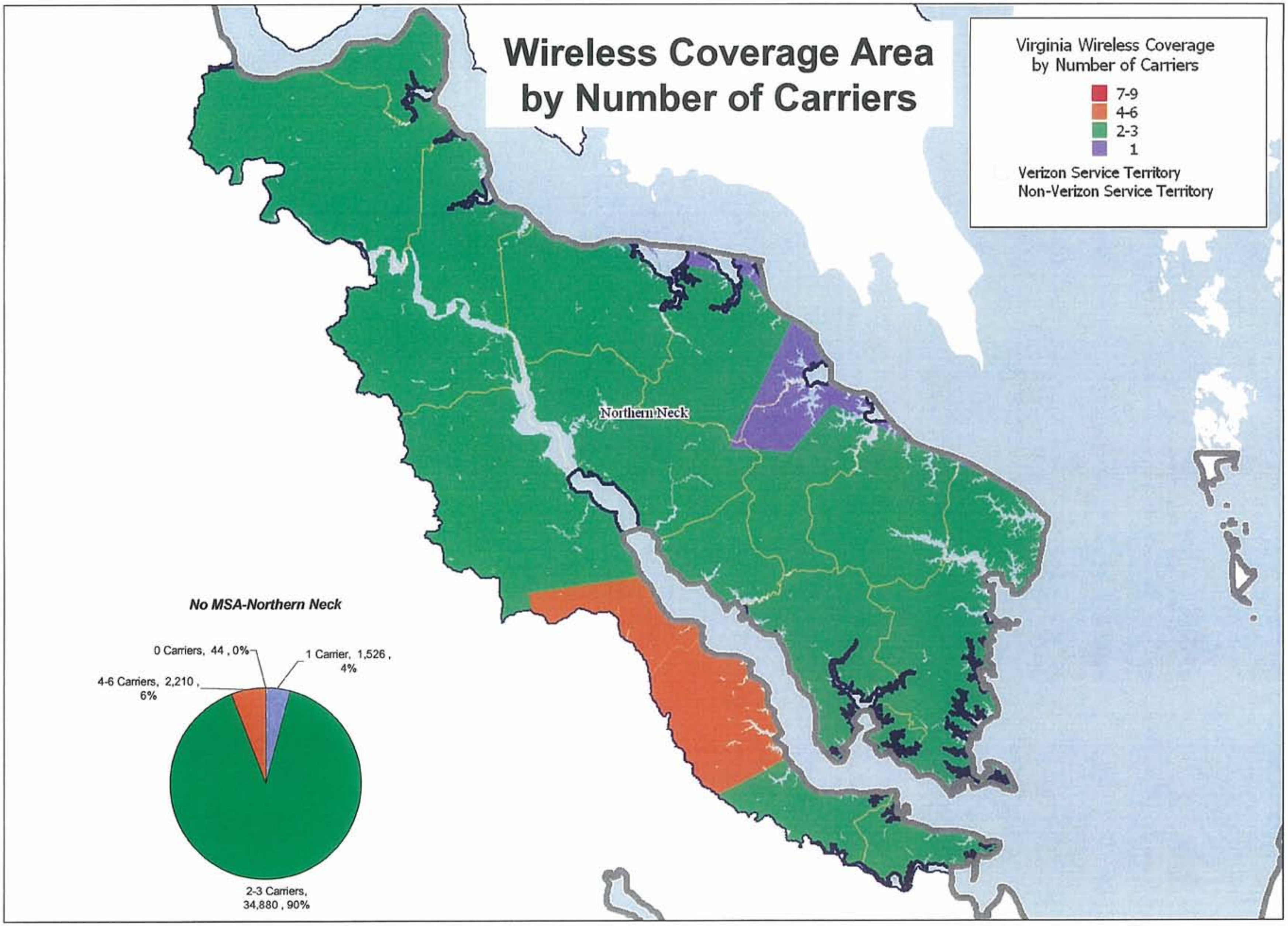


Exhibit NN-12

Note: HH numbers reflect only those households in Verizon's Service Territory

NN-13

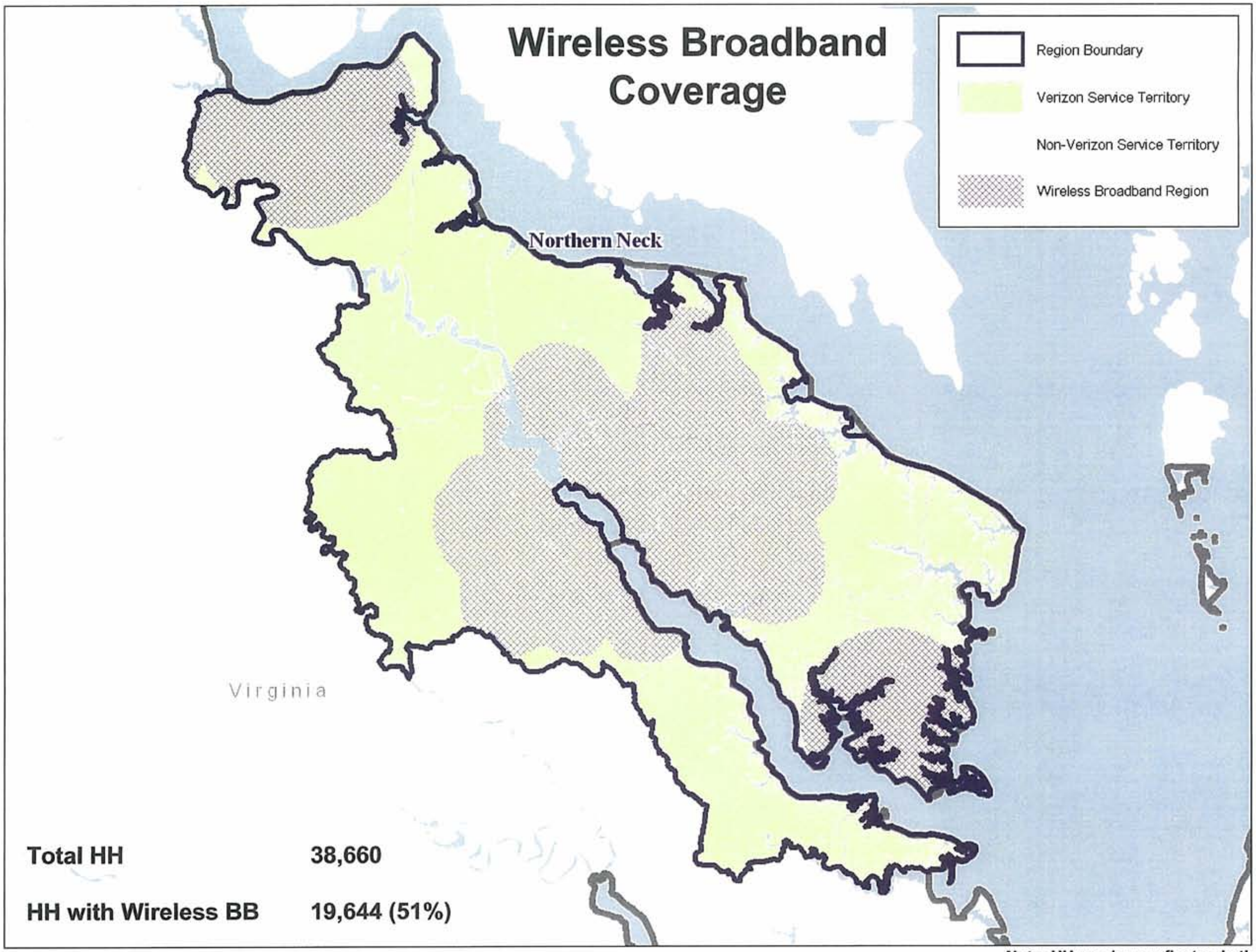
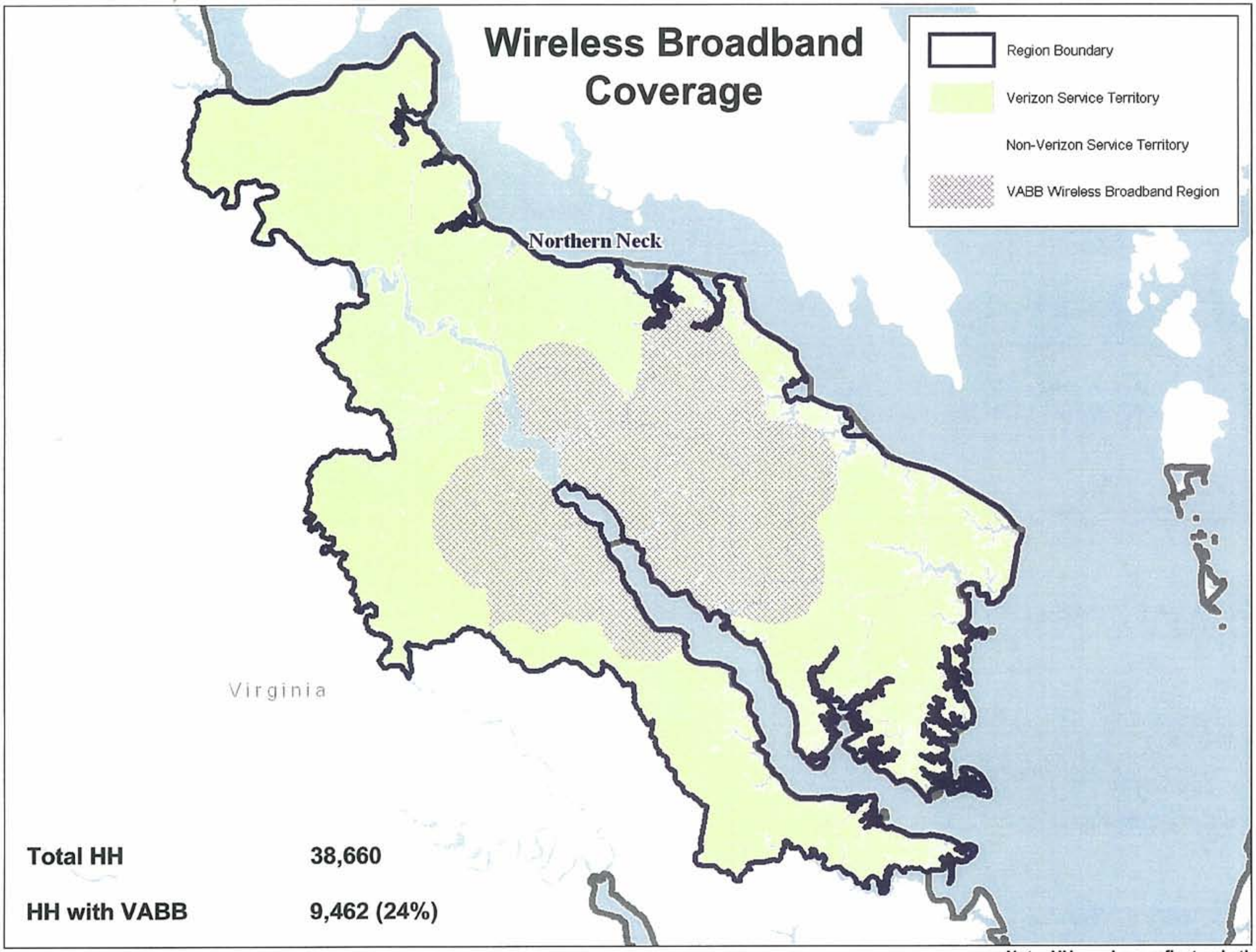


Exhibit NN-13, page 1 of 2

Note: HH numbers reflect only those households in Verizon's Service Territory



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Note: HH numbers reflect only those households in Verizon's Service Territory

NN-14

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EXHIBIT NN14

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EXHIBIT

NN-15

CONFIDENTIAL

EXHIBIT NN15

NN-16

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EXHIBIT NN-16

NN-17

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EXHIBIT NN-17

NN-18

CONFIDENTIAL

EXHIBIT NN-18

NN-19

CONFIDENTIAL

EXHIBIT NN-19.